

## REMARKS – General

By the above amendment, Applicant has rewritten all claims to define the invention more particularly and distinctly so as to define the invention patentably over the prior art.

### **O.A. Section 5 - The Rejection of Claim 1 on Bates (U.S. Patent 5,877,766) and Bates (U.S. Patent 5,390,295) Is Overcome by Claim 5, combining and amending Claims 1 and 2**

In O.A. Section 5, the Examiner states that combination of Bates (U.S. Patent 5,877,766) with Bates (U.S. Patent 5,390,295) would have been obvious to a person of ordinary skill in the art.

Applicant requests reconsideration of this rejection in light of amended claim 5, for the following reasons:

- (1) There is no justification, in Bates (U.S. Patent 5,877,766) or Bates (U.S. Patent 5,390,295), or in any other prior art separate from applicants' disclosure, which suggests that these references be combined, much less be combined in the manner proposed.
- (2) The references teach away from combining in the manner proposed
- (3) Even if combined in the proposed manner, the references would not meet the claims of the present invention

### *The References and Differences Of The Present Invention Thereover*

Prior to discussing the claims and the above three points, applicant will first discuss the references and the general novelty of the present invention and its unobviousness over the references.

Bates (U.S. Patent 5,877,766) shows a graphical user interface and method for displaying linked records using a hierarchical tree. Bates (U.S. Patent 5,390,295) shows an apparatus for changing proportionality of the screen display depending on the amount of time spent using the activation window. The Examiner interprets that if the window is active, it could be considered user interest. The Examiner concludes that a combination of Bates (U.S. Patent 5,877,766) hierarchical tree map with Bates (U.S. Patent 5,390,295) proportional window display would have been obvious, and on this basis rejects claim 1.

Claim 5 overcomes the rejection by combining claims 1 and 2, narrowing the scope of the combined claim to recite a method for storing and navigating a plurality of non-hierarchically related nodes, combining both non-hierarchical map display and node content presentation that is sized proportional to user interest.

Claim 5 is novel over the prior art, as it embodies both a proximity mapping based on non-hierarchical relationships among nodes and a mechanism to proportionally adjust the size of node display elements based on user interest, thereby allocating more space to those nodes that hold more interest to the user.

*Combination of Bates (U.S. Patent 5,877,766) and Bates (U.S. Patent 5,390,295) is not suggested in the prior art.*

With regard to the proposed combination of Bates (U.S. Patent 5,877,766) with Bates (U.S. Patent 5,390,295), it is well known that in order for any prior-art references themselves to be validly combined for use in a prior-art §103 rejection, *the references themselves* (or some other prior art) *must* suggest that they be combined. E.g. as was stated in In re Sernaker, 217 U.S.P.Q. 1, 6 (C.A.F.C. 1983):

“[P]rior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings.”

That the suggestion to combine the references should not come from applicant was forcefully stated in Orthopedic Equipment Co. v. United States, 217 U.S.P.Q 193, 199 (C.A.F.C. 1983):

“It is wrong to use the patent in suit [here the patent application] as a guide through the maze of prior art references, combining the right references in the right way to achieve the results of the claims in suit [here the claims pending]. Monday morning quarterbacking is quite improper when resolving the question of non-obviousness in a court of law [here the PTO].”

As was further stated in Uniroyal, Inc. v. Rudkin-Wiley Corp., 5 U.S.P.Q. 2d 1434 (C.A.F.C. 1988), “[w]here prior-art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. ... *Something in the prior art must suggest the desirability and thus the obviousness of making the combination.*”  
[Emphasis supplied]

In line with these decisions recently the Board stated in Ex parte Levengood, 28 U.S.P.Q.2d 1300 (P.T.O.B.A.&I. 1993):

“In order to establish a *prima facie* case of obviousness, it is necessary for the examiner to present *evidence*, preferably in the form of some teaching, suggestion, incentive or inference in the applied prior art, or in the form of generally available knowledge, that one having ordinary skill in the art *would have been led* to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention. ... That which is within the

capabilities of one skilled in the art is not synonymous with obviousness. ... That one can *reconstruct* and / or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the arts to combine the teachings of the references to make the claimed invention. ... Our reviewing courts have often advised the patent and trademark office that it can satisfy the burden of establishing a *prima facie* case of obviousness only by showing some objective teaching in either the prior art, or knowledge generally available to one of ordinary skill in the arts, that ‘would lead’ that individual ‘to combine the relevant teachings of the references.’ ... Accordingly, an examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant’s invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent application has done.”

In the present case, there is no reason given in the last O.A. to support the proposed combination, other than the statement that a person of ordinary skill in the art would have been motivated to search “if there was an apparatus that had the ability to display hierarchy information in a window that changes the proportionality format”. This justification offers no incentive for someone with ordinary skill in the art to be led to combine Bates hierarchical tree with Bates proportional window. Bates (U.S. Patent 5,877,766) suggests no mechanism for determining proportional user interest, so there would be no impetus for someone with ordinary skill in the art to seek a mechanism that depends on the availability of proportional user interest data: .....

As stated in the above Levengood case:

“That one can *reconstruct* and / or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the

basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the arts to combine the teachings of the references to make the claimed invention.”

Applicant therefore submits that combining Bates (U.S. Patent 5,877,766) with Bates (U.S. Patent 5,390,295) is not legally justified and is therefore improper. Thus applicant submits that the rejection on these references is also improper and should be withdrawn

Applicant respectfully requests, if the claims are again rejected upon any combination of references, that the Examiner include an explanation, in accordance with M.P.E.P. §706.02, Ex parte Clapp, 27 U.S.P.Q. 972 (P.O.B.A. 1985), and Ex parte Levengood, supra., a “factual basis to support his conclusion that it would have been obvious” to make the combination.

*Bates (U.S. Patent 5,877,766) teaches away from combination whereby proportional user interest is used to determine size of browser windows.*

The specification for Bates (U.S. Patent 5,877,766) depicts a preferred embodiment (Bates Figure 1) where the display area has been divided in to two parts. The upper part depicts the map display, showing hierarchical node relationships. The lower part contains browser windows displaying the node contents. There is no suggestion in the specification that there be a one-to-one correspondence between browser windows and node display elements in the map display, which would be a needed condition to effectively combine the proportional windows of Bates (U.S. Patent 5,390,295) with the browser windows of Bates (U.S. Patent 5,877,766) to meet the claims of the present invention.

Bates (U.S. Patent 5,877,766) teaches away from the concept of having one browser window per document. The preferred embodiment utilizes browser windows that exist prior to the generation of the map display and the plurality of node display elements

contained therein. In the section on 'Map Display Initialization', it is made clear that "a request to create a new map display generates a create map event, which is received by browser" (col. 14, line 21). After the map display is create, a "new scroll display element is initialized to point to the node display element associated with the document currently displayed in the browser" (col. 15, line 47). This associates the pre-existing browser with one particular node display element within the map display, but there is no provision for creating multiple browsers for all visible node display elements.

Node display elements are added to the map display in response to "an end user selecting a link to a target document in the currently-displayed document...for the browser" (col. 16, line 18). This shows that the preferred embodiment expects a single browser window to be used to navigate through multiple documents. This teaches away from using the size of the browser window to reflect user interest in a single document.

This expectation of a single browser used to navigate multiple documents is again taught by the "bounded drag" feature, whereby "an end user is able to drag a slider through one or more node display elements such that the browser associated with the slider is updated...to display the contents of the document associated with the current node display element" (col. 22, line 19). This mechanism also teaches away from using the size of the browser window to reflect user interest in a single document.

Additionally, the preferred mechanism for creating a new browser window is given as "adding a new slider to a map display and opening a new browser associated therewith" (col. 24, line 57). This reference and the previous ones all clearly point to a one-to-one correspondence between the browser window and the "slider" device on the map display. But one or a few "sliders" are used to navigate among the plurality of nodes. Thus an attempt to proportionally size the browser window based on user interest in a single document would require that a single browser window be associated only with said single document, resulting in an inoperative "slider" mechanism.

For the above reasons, applicant submits that Bates (U.S. Patent 5,877,766) teaches away from combination with Bates (U.S. Patent 5,390,295) in a manner whereby browser windows from Bates (U.S. Patent 5,877,766) are sized proportionally to user interest as in Bates (U.S. Patent 5,390,295).

*Bates (U.S. Patent 5,877,766) teaches away from combination whereby proportional user interest is used to determine size of node display elements in the map display.*

Combining Bates (U.S. Patent 5,390,295) into Bates (U.S. Patent 5,877,766) by changing size of node display elements in the map display, such that size is proportional to user interest, is not suggested in Bates (U.S. Patent 5,877,766). Rather Bates (U.S. Patent 5,877,766) explicitly teaches away from this combination by disclosing that the node display element size is determined by the size of the node content, not by user interest in the node – “each node display element may also be sized relative to other node display elements to indicate a relative size of its associated record” (col. 7, line 29). Usage of node display element size in this manner pre-empts usage for depicting proportional user interest.

In the disclosure of the ‘Map Display Data Structure’, Bates (U.S. Patent 5,877,766) lists the expected data and attributes tracked for each node display element, including “address or location of associated document; size of associated document; display characteristics, e.g., position, orientation, size, span, etc.; status indication variables, e.g., selected, cached, matching, etc.; data structure of links...” (col. 12, line 43). Proportional user interest, represented by amount of time spent using an active window as per the Examiner’s interpretation, is not listed as one of the attributes to be tracked for each node display elements.

In the specification for Bates (U.S. Patent 5,877,766), the means of determining the size of a node display element is disclosed in block 316 of figure 11, and in col. 17 line 5. Block 316 of the flowchart is executed only when a new node display element is added to

the map display, e.g., when the user first navigates to a document that has no node display element. At this point the size of the node display element is established (when it is first created). However, there is no disclosure of a mechanism to subsequently update the size of the node display element in response to user interaction indicating interest in the node. Attempting to combine a mechanism to update size of the node display element to indicate changing proportional user interest would render inoperative the function of block 316 of figure 11, and the subsequent functional blocks in the flowchart.

For the above reasons, applicant submits that Bates (U.S. Patent 5,877,766) teaches away from combination with Bates (U.S. Patent 5,390,295) in a manner whereby node display elements from Bates (U.S. Patent 5,877,766) are sized proportionally to user interest, as per Bates (U.S. Patent 5,390,295).

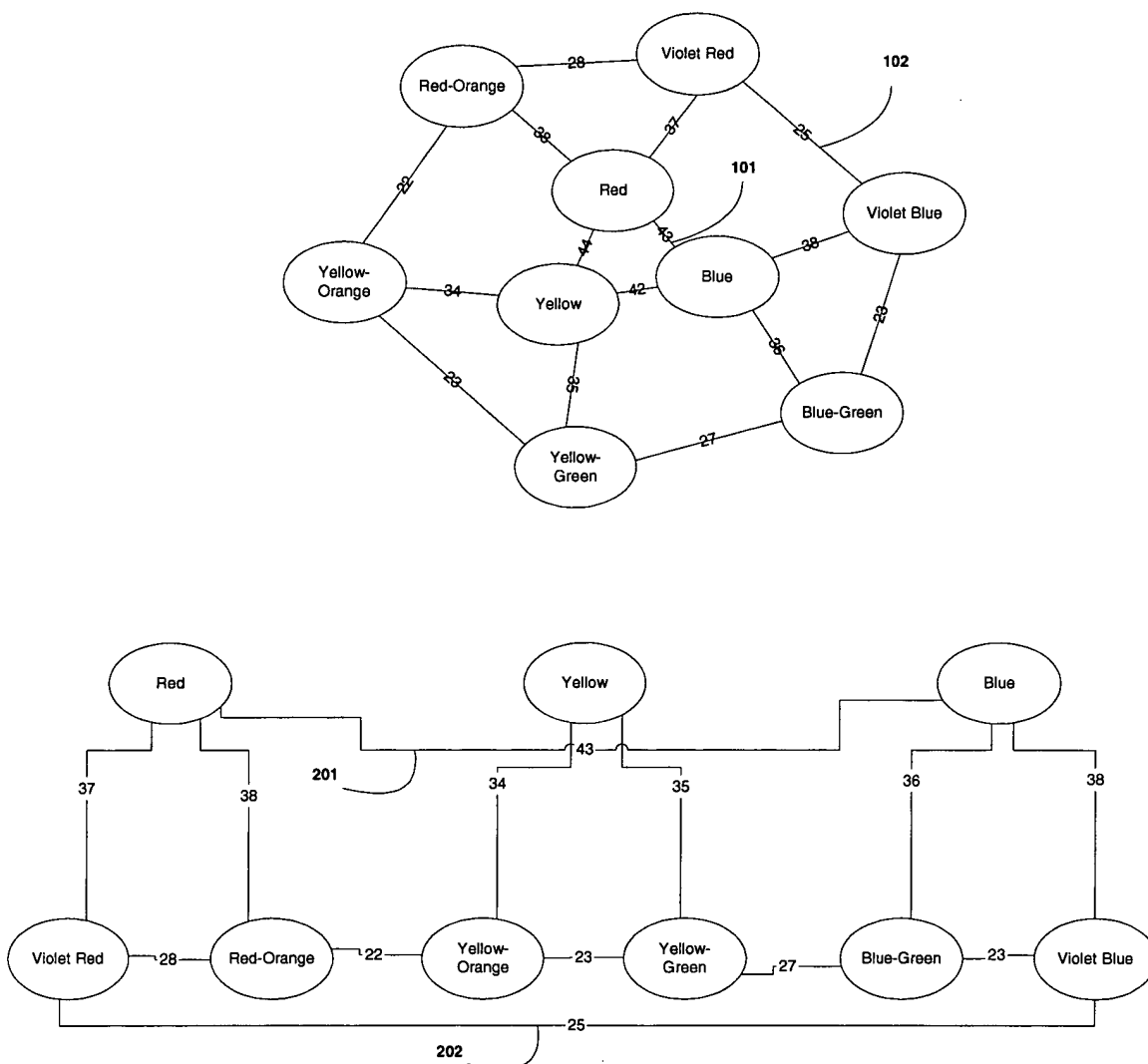
*Combining Bates (U.S. Patent 5,877,766) into Bates (U.S. Patent 5,390,295) fails to meet the claims with respect to efficient navigation of non-hierarchical node relationships.*

Bates (U.S. Patent 5,877,766) does not recognize the problem of depicting a collection of non-hierarchically linked nodes. The method of depicting non-hierarchically linked nodes is substantially more complex than depicting a collection of hierarchically linked nodes as disclosed in Bates.

An example of the inability of a hierarchical tree display to accurately depict certain relationships is illustrated in Figure 1. The numerical values indicate relatedness whereby higher numerical values indicate that two nodes are more related. The Bates hierarchical tree would not be able to accurately depict the relationship between Red and Blue nodes, or between 'Violet-Red' and 'Violet-Blue' nodes, "such that proximity is substantially proportional to relatedness" (claim 5 of present invention). The distortions that would result are illustrated in the lower part of Figure 1. Note the excessive lengths of the links connecting 'Violet-Red' and 'Violet-Blue' (compare element **102** to **202**), as



well as 'Red' and 'Blue' (compare element **101** to **201**), in relation to links with similar numerical weights.



**Figure 1**

Extending Bates hierarchical tree view to accurately depict non-hierarchical relationships among nodes would require significant experimentation and thus would not be obvious to a person practiced in the arts, and Bates (U.S. Patent 5,877,766) discloses no such method. Further extension to support both non-hierarchical relationships and nodes sized

proportional to user interest within a single map display, as claimed in claim 5, would require additional significant experimentation, and thus would not be obvious to a person practiced in the arts. Neither Bates (U.S. Patent 5,877,766) nor Bates (U.S. Patent 5,390,295) discloses such a method.

**O.A. Section 6 - The Rejection of Claim 2 on Bates (U.S. Patent 5,877,766) Is Overcome by Claim 5**

Bates (U.S. Patent 5,877,766) sets priorities on documents, which Examiner in O.A. section 6 asserts are able to serve the same purpose as the weighted links between nodes recited in claims 1 and 2.

*Calculating priorities that are able to serve the same purpose as weighted links would not be obvious to a person practiced in the arts.*

In order for priorities on documents to serve the same purpose as weighted links between nodes, priorities would need to be calculated such that if a document has a high priority, then related documents would also have high priorities.

Any suitable method of calculating the priorities thus defined would need to calculate the priority value for an initial document as a function of the priority values of related documents (so that when the related documents have a high priority, the initial document would also have a high priority). The priority values of the related documents would then, in turn, depend on the priority value of still other related documents, including the initial document. A circular reference would result, and the priority values would not be able to be effectively calculated.

Deriving an effective method of calculating the priorities thus defined, such that the calculation completes in a reasonable length of time, requires significant experimentation and would thus be unobvious to a person of ordinary skill in the art. The derived method of calculating priorities would need to be disclosed. Such a method is disclosed in Figure

8 of the present invention, and beginning in paragraph [0088]. No such method is disclosed in Bates (U.S. Patent 5,877,766).

Therefore the applicant submits that the claim of weighted links for determining proximity of nodes in claim 5, combining and amending claim 1 and 2, is a novel feature that is unobvious over Bates (U.S. Patent 5,877,766).

*Bates (U.S. Patent 5,877,766) fails to appreciate the advantage of depicting non-hierarchical node relationships.*

The Examiner states that the hierarchical view recited in Bates (U.S. Patent 5,877,766) could serve the same purpose as the non-hierarchical mapping method disclosed in the application “whereby nodes that are more related are presented in closer proximity to each other than nodes that are less related”.

Bates (U.S. Patent 5,877,766) fails to appreciate the advantage of depicting a collection of non-hierarchically linked nodes. The method of depicting non-hierarchically linked nodes is substantially more complex than depicting a collection of hierarchically linked nodes. Nothing in Bates suggests the ability to store non-hierarchical node relationships, much less to depict them graphically.

An example of the inability of a hierarchical tree display to accurately depict certain relationships is illustrated in Figure 1. The Bates hierarchical tree would not be able to depict the ‘Red’ and ‘Blue’ nodes “such that proximity is substantially proportional to relatedness” (present invention, claim 5).

Extending Bates hierarchical tree view to display non-hierarchically linked nodes would require significant experimentation and thus would not be obvious to a person practiced in the arts, and Bates (U.S. Patent 5,877,766) discloses no such method. Further extension to support proportionally sizing the nodes within the map display to reflect user interest, as claimed in claim 5, would require additional significant experimentation, and

thus would not be obvious to a person practiced in the arts, and Bates (U.S. Patent 5,877,766) does not disclose such a method.

**O.A. Section 7 - The Rejection of Claim 3 on Bates (U.S. Patent 5,877,766) Is Overcome by Claim 6**

The Examiner states that Bates (U.S. Patent 5,877,766) search mechanism could serve the same purpose as the method of claim 3 for propagating activation (representing user interest) from one node to related nodes.

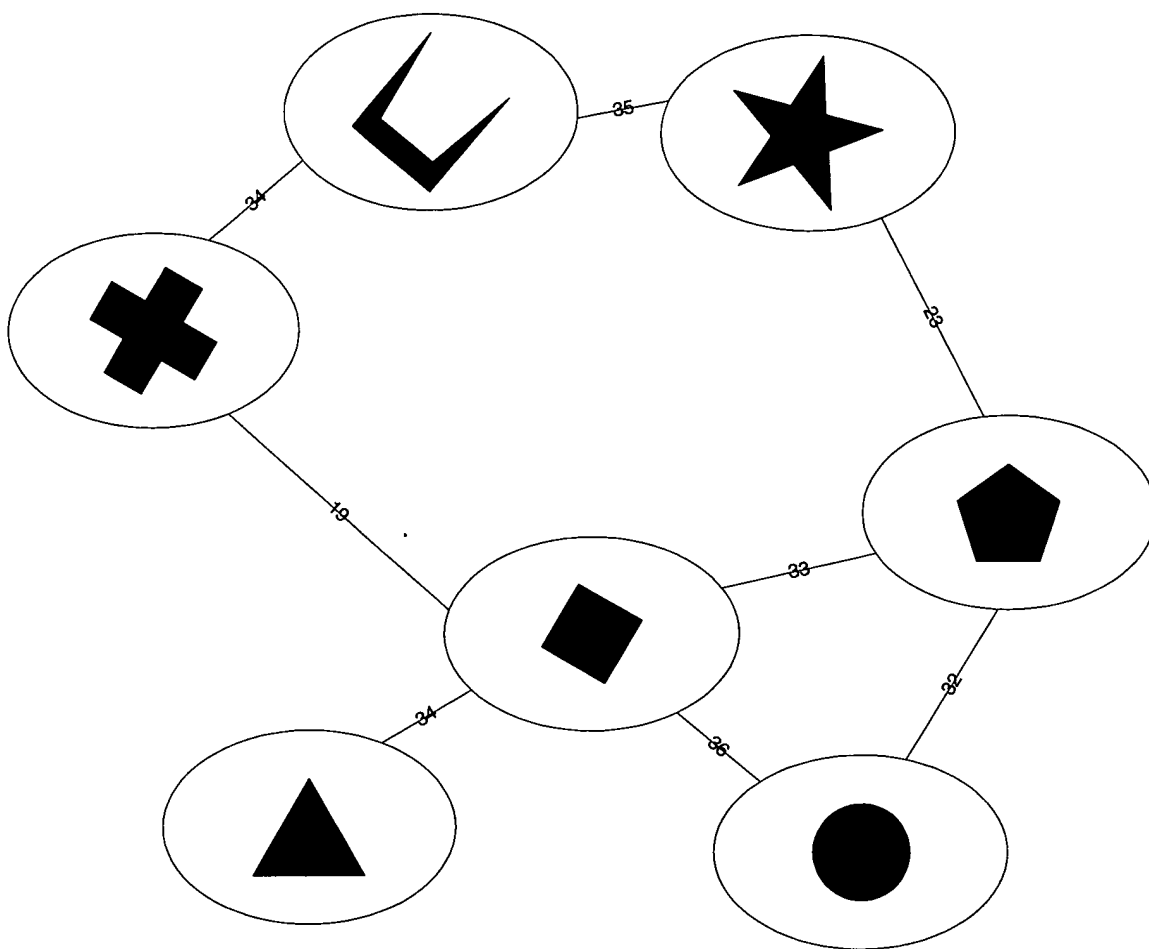
*Bates (U.S. Patent 5,877,766) search mechanism fails to recognize advantage of proportional node relationships.*

The simple search mechanism suggested by Bates could be used to determine if two nodes are related, for example by the existence of a common search term. The result would be either 'yes' if they are related or 'no' if they are not related.

This mechanism fails to recognize the inherent advantages of utilizing proportional relatedness among nodes. For instance, a simple search might be able to tell that document A, B, and C all contain the word "garden", but not that document A and document B are 90% related, while document A and document C are only 40% related. The ability to efficiently exploit proportional relatedness values, in the form of link weights, is one of the significant advantages of the present invention over the prior art.

Additionally, proportional relatedness among nodes need not depend upon the textual content of the nodes. Figure 2 depicts a collection of graphical nodes with corresponding link weights. The given link weights are related to the visual similarity between the nodes, and may be determined by human judgment rather than by automated means. This can only be effectively implemented by storing explicit proportional relatedness values,

as in the present invention. Bates (U.S. Patent 5,877,766) discloses no mechanism for storing proportional relatedness values between pairs of node elements.



**Figure 2**

More sophisticated search methods are able to assign relevance scores to the search; for example, see Page (U.S. Patent 6,285,999). These could be used to determine proportional relatedness. However, such methods are not obvious to one practiced in the art, as is evidenced by the allowance of patents for these methods.

*Combining a more sophisticated search method into Bates (U.S. Patent 5,877,766) is not suggested by Bates.*

Furthermore, combining Page (U.S. Patent 6,285,999), or a similar search method, with Bates (U.S. Patent 5,877,766), to utilize the relevance scores in view of Bates search mechanism, is not suggested by Bates or elsewhere in the prior art. This is because Bates (U.S. Patent 5,877,766) discloses no method of utilizing proportional relatedness for the purpose of depicting or navigating among the documents. Therefore one of ordinary skill in the art would not be motivated to find a search algorithm that generates proportional relatedness values, as Bates does not suggest a use for such values. Deriving a method of utilizing proportional relatedness among a plurality of nodes, for the purpose of efficiently navigating the nodes, can only be achieved through substantial experimentation and would thus not be obvious to a person practiced in the art.

*Dependent Claim 6 is A Fortiori Patentable over Bates (U.S. Patent 5,877,766)*

Dependent claim 6 incorporates all the subject matter of claim 5, which makes it a fortiori and independently patentable over the reference.

**O.A. Section 8 – Dependent Claim 7 is A Fortiori Patentable over Bates (U.S. Patent 5,877,766)**

In O.A. Section 8, the Examiner states that Bates (U.S. Patent 5,877,766) discloses storing with each document “one or more from the group consisting of descriptive text, ..., computer programs”. Additionally, Examiner states that Bates (U.S. Patent 5,390,295) discloses “elements of the node are displayed in an amount of detail proportional to the user’s interest in the node.”

The applicant submits that dependent claim 7 incorporates all the subject matter of claim 5 and 6, which makes it a fortiori and independently patentable over the reference.

**Present Invention is Novel and Unobvious over Bates (U.S. Patent 6,760,048)**

The Examiner cites reference Bates (U.S. Patent 6,760,048), which discloses a method for unoccluding displayed windows in response to user action that causes windows to be occluded.

Applicant submits that the present invention defines patentably over the reference, because the present invention discloses a method of depicting non-hiearchically related nodes such that proximity of node presentation is substantially proportional to relatedness of nodes (i.e. non-hierarchical node mapping). There is no suggestion in Bates (U.S. Patent 6,760,048) to combine it with a method of non-hierarchical node mapping.

Additionally, present invention discloses a method of determining size of node presentation proportional to user interest. There is no suggestion in Bates (U.S. Patent 6,760,048) to combine it with a method of determining size proportional to user interest. Also no motivation is provided for such a combination.

#### **Availability of functional Reduction to Practice**

A working embodiment of the present invention is publicly available, distributed under the name 'theWheel'. Information on said embodiment, including screen shots and program download, can be found on the World-Wide Web at

<http://www.2nd-messenger.com>.

#### **Conclusion**

For all of the above reasons, applicant submits that the claims all define patentably over the prior art. Therefore he submits that this application is now in condition for allowance, which action is respectfully solicited.

**Conditional Request for Constructive Assistance**

Applicant has amended the specification and claims of this application so that they are proper, definite, and define novel structure which is also unobvious. If, for any reason, this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. §2173.02 and §707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very Respectfully,



Derek Graham Lane

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2004 Nov. 23



Derek Graham Lane, Applicant